REMARKS

Amendments

Claims 1, 5, 6, 7, 8, 10, and 15 are amended to further clarify the language thereof. These amendments are supported throughout the disclosure. See, e.g., page 6, lines 18-32, page 7, line 16-page 10, line 18, page 12, lines 7-19, and page 13, lines 25-32. New claims 31-37 are directed to further aspects of the invention and are supported throughout the disclosure. See, for example, page 6, line 34-page 7, line 4, page 12, lines 7-19, page 13, lines 21-32, and page 15, lines 13-15.

Advisory Action

In the Advisory Action issued August 19, 2009, it is argued that:

> "Gass is the primary reference that teaches an alternative embodiment of an alignment layer that contains a reactive acrylate compound after preparation of the alignment layer (column 4, lines 50-51) but is silent regarding the specifics of the reactive acrylate component."

It is correct that in this embodiment Gass et al. do not describe specifics of the reactive acrylate. However, there is also no suggestion or hint by Gass et al. that in this embodiment the alignment layer contains any materials other than the film-forming materials used to form the alignment layer. Thus, there is no suggestion that the alignment layer contains reactive compounds or reactive additives. Instead, the implication is that the film-forming materials used to form the alignment layer contain reactive groups. Gass et al. also do not disclose that the alignment layer, after its preparation, contains least one reactive mesogen additive with unreacted polymerizable groups.

With regards to Onishi et al., it is argued in the Advisory Action that this is a "bridging reference" and that Onishi et al. teach that **when an alignment layer contains a mesogenic component** it has better alignment control (emphasis added), citing column 7, lines 10-25. See, e.g., the top of page 3 of the Advisory Action. However, **Onishi et al. do not teach an alignment layer containing mesogenic material.** The relevant disclosure of Onishi et al. at column 7, lines 5-25 is reproduced below (emphasis added):

When a liquid crystal display device of a display mode utilizing orientation

> restricting force (which is substantially provided by an alignment film formed thereon) of a substrate is produced by using a liquid crystal material and a polymerizable compound, **a polymer region formed from the polymerizable compound is formed between the alignment and a liquid crystal region,** thereby reducing the orientation restriction force of the alignment film for the liquid crystal molecules. On the other hand, when a mesogen backbone is introduced in the molecule of the polymerizable compound, as in the present polymerizable compound, polymer having a structure similar to that of liquid crystal molecules exists in the polymer region. As a result, the polymer region becomes capable of transmitting the orientation restricting force of the alignment film. Therefore, even if such a polymer region exists between the liquid crystal region and the alignment film, the orientation restricting force of the alignment film is sufficiently transmitted to the liquid crystal molecules within the liquid crystal regions, whereby the orientation state of liquid crystal molecules within the liquid crystal regions is stabilized. Furthermore, the use of the present polymerizable compound causes liquid crystal molecules to have a pretilt, which effectively prevents the generation of disclination lines when a voltage is applied.

As can be seen from the above description, the polymerizable compound utilized by Onishi et al. is part of the liquid crystal layer, **not part of the alignment layer.** As stated by Onishi et al., the polymer region is part of the liquid crystal layer and this polymer region is formed from the polymerizable compound of Formula I. In addition, as with the disclosure of Gass et al., Onishi et al. do not disclose an alignment layer, wherein after preparation thereof, the alignment layer contains at least one reactive additive such as an acrylate compound, let alone an alignment layer that contains least one reactive mesogen additive with unreacted polymerizable groups.

With regards to O'Neill et al., it is asserted that the O'Neill disclosure is a secondary reference "that teaches an alignment layer ([0002]) that comprises a reactive acrylate mesogen additive with unreacted polymerizable groups (reactive liquid crystal formed from a reactive mesogen, Compound 4, [0025])." See page 3 of the Advisory Action. In addition, it is argued that the reactive mesogen Compound 4 taught by O'Neill et al. is not the same as the transport Compounds 5-8 taught by O'Neill et al.

Applicants do not disagree the reactive mesogen Compound 4 is different from transport Compounds 5-8. However, applicants do disagree that O'Neill et al. utilize the Compound 4 in the alignment layer. As clearly stated in paragraph [0026], which follows

directly after the disclosure of the reactive liquid crystal of Compound 4 in paragraph [0025]: "In these cases the liquid crystal polymer or reactive mesogen is coated onto a conventional alignment layer."

Thus, contrary to the assertion in the rejection, O'Neill et al. clearly state that the reactive mesogen is coated onto a conventional alignment layer, rather than forming part of the alignment layer.

In view of the above remarks, it is respectfully submitted that the disclosure of Gass et al. (US '716), alone or in combination the disclosures of Onishi et al. (US '378), O'Neill et al. (US '113), and/or Ichimura et al. (US '277), fails to render obvious applicants' claimed invention. Withdrawal of the rejections is respectfully requested.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,

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